

FORMER NEBRASKA ORDNANCE PLANT

OPERABLE UNIT 3 PUBLIC MEETING

March 5, 2007

Former Nebraska Ordnance Plant OU3 Public Meeting Meeting March 5, 2007

Introductions & Administrative Items	7:00-7:10
Antimony Removal Action	7:10-8:00
Ordnance & Explosives Recurring Review	8:00-8:30
Questions & Answers	8:30-9:00
ARDC Facility Closes	9:00

Introductions

- **Community Co-Chair – Melissa Konecky**
- **Army Co-Chair – Garth Anderson**
- **Restoration Advisory Board (RAB)
Members**

Administrative Items

Meeting Guidelines

- Honor time limits (Start/End on Time)**
- Stick to the agenda**
- One question at a time**
- Respect others**
- No personal attacks**
- Ensure equal participation**

Administrative Items

Meetings are being recorded

- Cameras are being used to videotape this meeting**
- Transcriptionist is present to record this meeting**
- When you ask a question – state your name loudly and clearly for the transcriptionist to hear you**
- One question at a time**

Administrative Items

Mead Project Mailing List

- In order to better share information with the community, we update our mailing list**
- If you would like to receive site information from us, please use include your name and address on the sign in sheet**
- This information will not be shared with anyone and will only be used to mail information to you**

Administrative Items

Mead Project Web Site

- <http://www.nwk.usace.army.mil/projects/mead/projectindex.html>**
- Email list. By request, we will send email notifications when new information is posted on the web site. Please include on sign in sheet**

OU3 History

Covers all areas of site not included in OU1 (Soil) and OU2 (Groundwater)

- Metals in soil**
- Contamination in former production buildings**
- Waste disposal areas and landfills**
- Underground storage tanks**
- Surface water**
- Ordnance and Explosives (OE) Recurring Review**

OU3 Timeline

- **1995: Phase I Field Investigation**
- **1996: Phase II Field Investigation**
- **1997: RI Report and Baseline Risk Assessment**
- **2000: Phase III and RI Addendum**
- **2000: Feasibility Study**
- **Land use control policy and issues have delayed completion of Proposed Plan and Record of Decision**

Remedial Investigation Areas

- Load Line Buildings
- Storage igloos
- Tetryl Pelleting Area
- North/South Burning Grounds
- Proving Grounds
- Potential Landfill Area
- Former NOP Landfill
- Demolition Ground

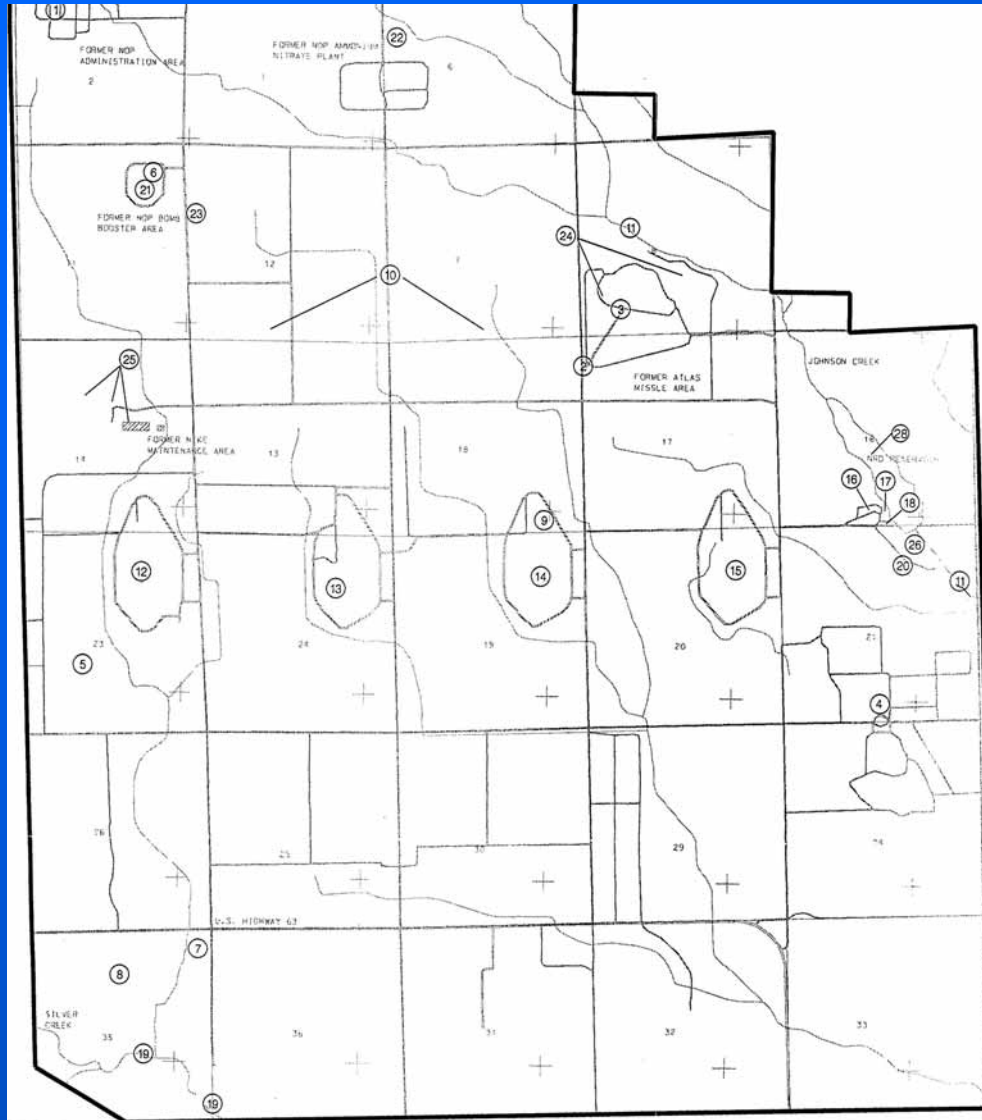
Remedial Investigation Areas

- Bermed Area SW of LL1
- Potential Waste Disposal Areas
 - Nike Maintenance Area
 - Bomb Booster Area
 - Ammonium Nitrate Plant
 - Atlas Missile Area
- Northeast Boundary Area
- Ammonium Nitrate Plant

Remedial Investigation Areas

- Johnson, Clear, Silver Creeks
- NRD Reservoir
- USTs
- Geophysical anomaly vic LL3
- Miscellaneous waste containers

Remedial Investigation Areas



INVESTIGATION AREA KEY:

- | | |
|--|----------------------------|
| ① Administration Area USTs | ②⑦ Northeast Boundary Area |
| ② Atlas Missile Area UST (Gate House) | ②⑧ NRD Reservoir |
| ③ Atlas Missile Area UST (Launch Operations Building) | ②⑨ Former NOP Boundary |
| ④ Agronomy Area USTs | |
| ⑤ Bermed Area Southwest of Load Line 1 | |
| ⑥ Bomb Booster Area USTs | |
| ⑦ Demolition Ground | |
| ⑧ Detonation Craters | |
| ⑨ Geophysical Anomaly at Load Line 3 | |
| ⑩ Raw Products Igloo Storage Areas | |
| ⑪ Johnson Creek | |
| ⑫ Load Line 1 | |
| ⑬ Load Line 2 | |
| ⑭ Load Line 3 | |
| ⑮ Load Line 4 | |
| ⑯ North Burning Ground | |
| ⑰ Potential Landfill Area | |
| ⑱ Proving Grounds | |
| ⑲ Silver Creek | |
| ⑳ South Burning Ground | |
| ㉑ Tetryl Pelleting Building | |
| ㉒ Waste Disposal Area North of the Ammonium Nitrate Plant | |
| ㉓ Waste Disposal Area Southeast of Former Bomb Booster Area | |
| ㉔ Waste Disposal Areas at Former Atlas Missile Area | |
| ㉕ Waste Disposal Areas North of Former Nike Maintenance Area | |
| ㉖ Landfill Area | |

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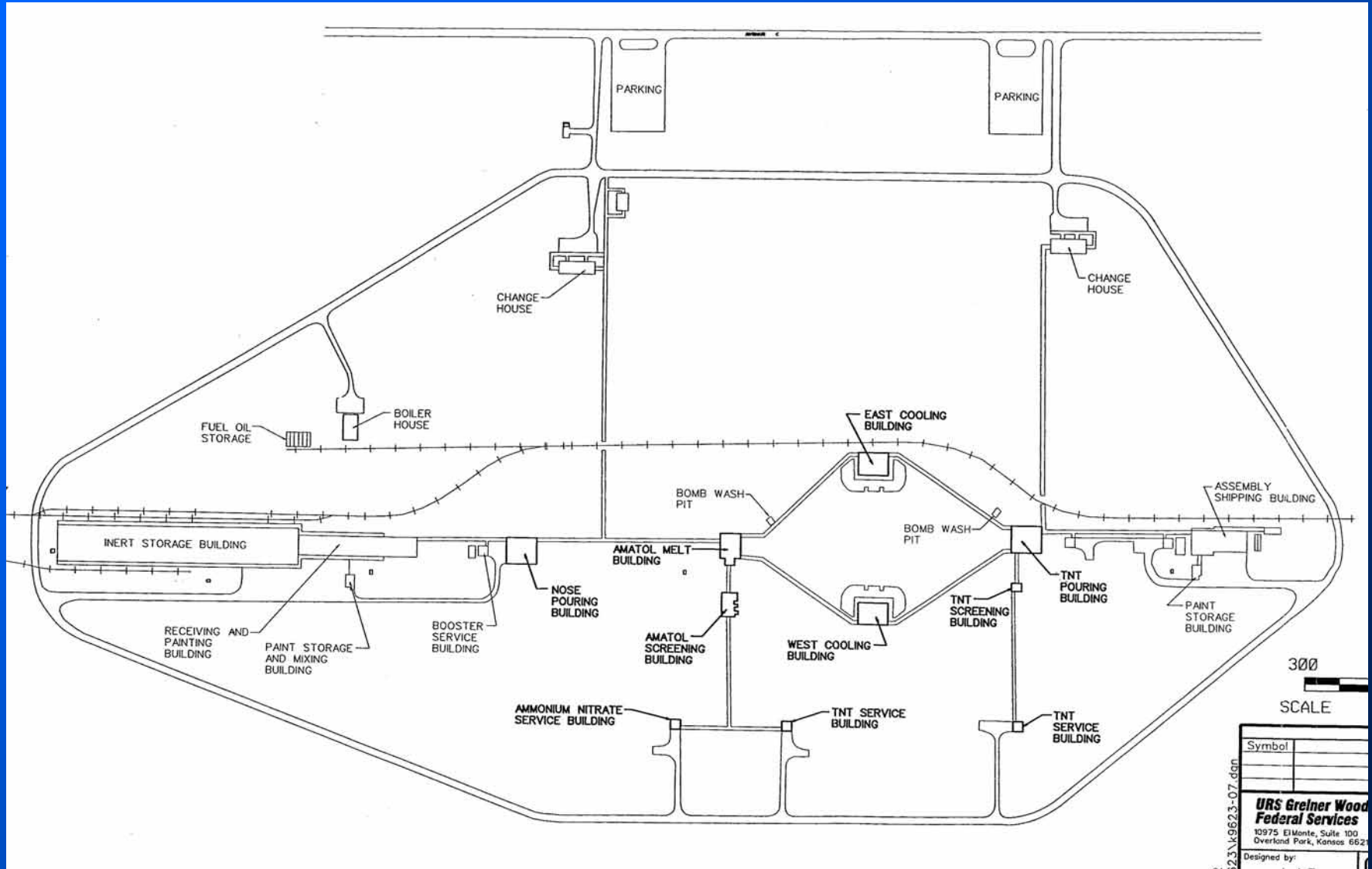
Symbol

URS Greiner Federal Services
10975 D'Monte Overland Park, KS 66209

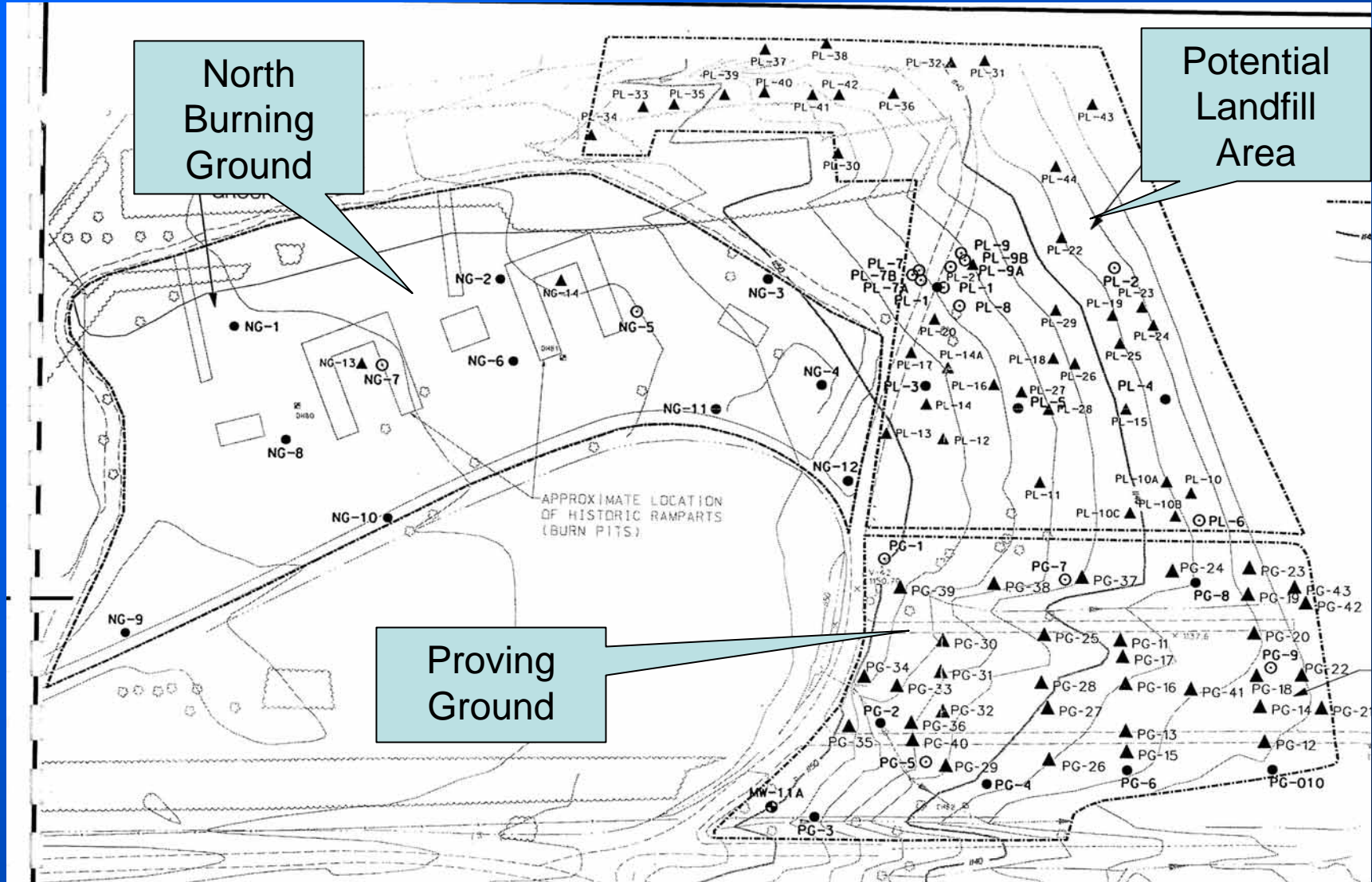
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Drawn by: R.A.D.
Checked by: L.A.T.
Submitted by: R.A.D.

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Typical Load Line Building



N. Burning, Proving Ground, Potential Landfill

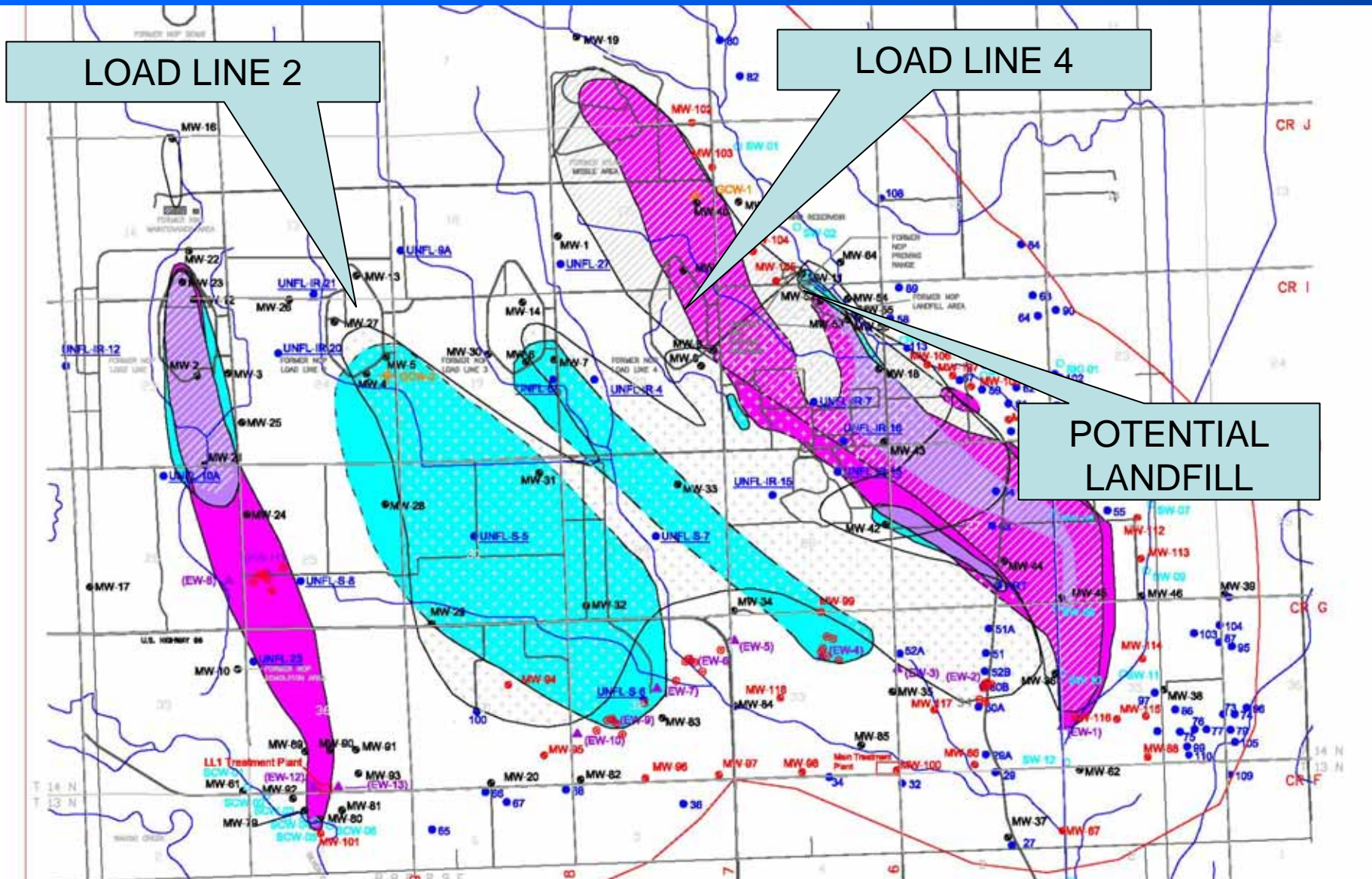


Investigation Results

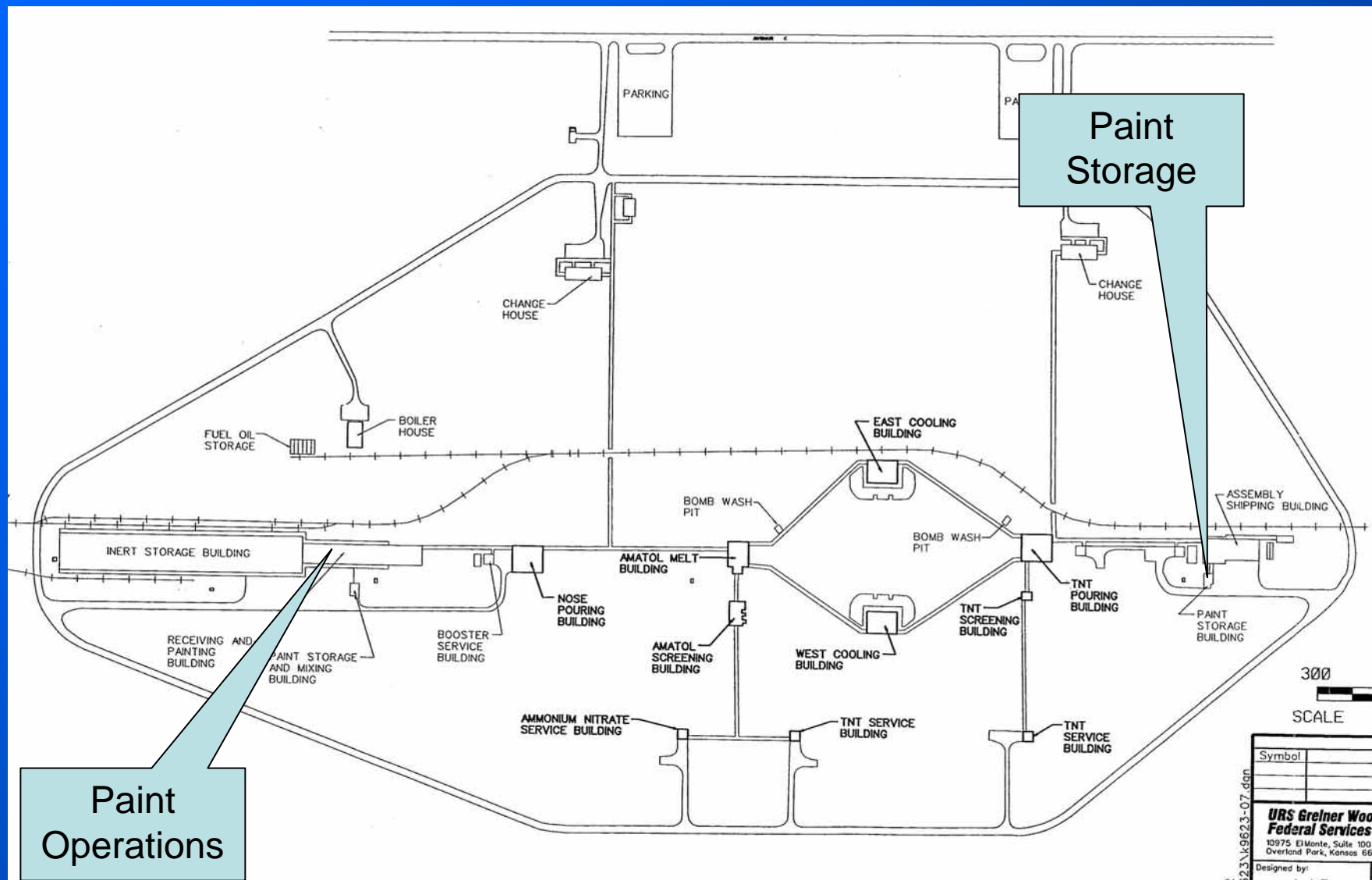
The only areas that showed contamination posing an unacceptable risk (from Antimony, a heavy metal):

- **LL2 & LL4 Paint Operations Areas**
- **Potential Landfill Area**

Investigation Results



Load Line Buildings



The map displays the North Burning Ground area with various monitoring points and features. Key elements include:

- Monitoring Points:**
 - NG (North Ground):** NG-1, NG-2, NG-3, NG-4, NG-5, NG-6, NG-7, NG-8, NG-9, NG-10, NG-11, NG-12, NG-13, NG-14.
 - PL (Potential Landfill):** PL-1, PL-2, PL-3, PL-4, PL-5, PL-6, PL-7, PL-8, PL-9, PL-10, PL-10A, PL-10B, PL-11, PL-12, PL-13, PL-14, PL-15, PL-16, PL-17, PL-18, PL-19, PL-20, PL-21, PL-22, PL-23, PL-24, PL-25, PL-26, PL-27, PL-28, PL-29, PL-30, PL-31, PL-32, PL-33, PL-34, PL-35, PL-36, PL-37, PL-38, PL-39, PL-40, PL-41, PL-42, PL-43, PL-44.
 - PG (Potential Ground):** PG-1, PG-2, PG-3, PG-4, PG-5, PG-6, PG-7, PG-8, PG-9, PG-10, PG-11, PG-12, PG-13, PG-14, PG-15, PG-16, PG-17, PG-18, PG-19, PG-20, PG-21, PG-22, PG-23, PG-24, PG-25, PG-26, PG-27, PG-28, PG-29, PG-30, PG-31, PG-32, PG-33, PG-34, PG-35, PG-36, PG-37, PG-38, PG-39, PG-40, PG-41, PG-42, PG-43.
 - MW (Monitoring Well):** MW-11A.
- Geographic Features:**
 - NORTH BURNING GROUND:** Labeled in the upper left.
 - APPROXIMATE LOCATION OF HISTORIC RAMPARTS (BURN PITS):** Indicated by a dashed line.
 - Potential Landfill Area:** Highlighted in a light blue box on the right side of the map.
- Topography:** Contour lines are shown, with elevations such as 1150.7, 1152.5, 1157.5, 1160, 1162, 1164, 1166, 1168, 1170, 1172, 1174, 1176, 1178, 1180, 1182, 1184, 1186, 1188, 1190, 1192, 1194, 1196, 1198, 1200, 1202, 1204, 1206, 1208, 1210, 1212, 1214, 1216, 1218, 1220, 1222, 1224, 1226, 1228, 1230, 1232, 1234, 1236, 1238, 1240, 1242, 1244, 1246, 1248, 1250, 1252, 1254, 1256, 1258, 1260, 1262, 1264, 1266, 1268, 1270, 1272, 1274, 1276, 1278, 1280, 1282, 1284, 1286, 1288, 1290, 1292, 1294, 1296, 1298, 1300, 1302, 1304, 1306, 1308, 1310, 1312, 1314, 1316, 1318, 1320, 1322, 1324, 1326, 1328, 1330, 1332, 1334, 1336, 1338, 1340, 1342, 1344, 1346, 1348, 1350, 1352, 1354, 1356, 1358, 1360, 1362, 1364, 1366, 1368, 1370, 1372, 1374, 1376, 1378, 1380, 1382, 1384, 1386, 1388, 1390, 1392, 1394, 1396, 1398, 1400, 1402, 1404, 1406, 1408, 1410, 1412, 1414, 1416, 1418, 1420, 1422, 1424, 1426, 1428, 1430, 1432, 1434, 1436, 1438, 1440, 1442, 1444, 1446, 1448, 1450, 1452, 1454, 1456, 1458, 1460, 1462, 1464, 1466, 1468, 1470, 1472, 1474, 1476, 1478, 1480, 1482, 1484, 1486, 1488, 1490, 1492, 1494, 1496, 1498, 1500, 1502, 1504, 1506, 1508, 1510, 1512, 1514, 1516, 1518, 1520, 1522, 1524, 1526, 1528, 1530, 1532, 1534, 1536, 1538, 1540, 1542, 1544, 1546, 1548, 1550, 1552, 1554, 1556, 1558, 1560, 1562, 1564, 1566, 1568, 1570, 1572, 1574, 1576, 1578, 1580, 1582, 1584, 1586, 1588, 1590, 1592, 1594, 1596, 1598, 1600, 1602, 1604, 1606, 1608, 1610, 1612, 1614, 1616, 1618, 1620, 1622, 1624, 1626, 1628, 1630, 1632, 1634, 1636, 1638, 1640, 1642, 1644, 1646, 1648, 1650, 1652, 1654, 1656, 1658, 1660, 1662, 1664, 1666, 1668, 1670, 1672, 1674, 1676, 1678, 1680, 1682, 1684, 1686, 1688, 1690, 1692, 1694, 1696, 1698, 1700, 1702, 1704, 1706, 1708, 1710, 1712, 1714, 1716, 1718, 1720, 1722, 1724, 1726, 1728, 1730, 1732, 1734, 1736, 1738, 1740, 1742, 1744, 1746, 1748, 1750, 1752, 1754, 1756, 1758, 1760, 1762, 1764, 1766, 1768, 1770, 1772, 1774, 1776, 1778, 1780, 1782, 1784, 1786, 1788, 1790, 1792, 1794, 1796, 1798, 1800, 1802, 1804, 1806, 1808, 1810, 1812, 1814, 1816, 1818, 1820, 1822, 1824, 1826, 1828, 1830, 1832, 1834, 1836, 1838, 1840, 1842, 1844, 1846, 1848, 1850, 1852, 1854, 1856, 1858, 1860, 1862, 1864, 1866, 1868, 1870, 1872, 1874, 1876, 1878, 1880, 1882, 1884, 1886, 1888, 1890, 1892, 1894, 1896, 1898, 1900, 1902, 1904, 1906, 1908, 1910, 1912, 1914, 1916, 1918, 1920, 1922, 1924, 1926, 1928, 1930, 1932, 1934, 1936, 1938, 1940, 1942, 1944, 1946, 1948, 1950, 1952, 1954, 1956, 1958, 1960, 1962, 1964, 1966, 1968, 1970, 1972, 1974, 1976, 1978, 1980, 1982, 1984, 1986, 1988, 1990, 1992, 1994, 1996, 1998, 2000, 2002, 2004, 2006, 2008, 2010, 2012, 2014, 2016, 2018, 2020, 2022, 2024, 2026, 2028, 2030, 2032, 2034, 2036, 2038, 2040, 2042, 2044, 2046, 2048, 2050, 2052, 2054, 2056, 2058, 2060, 2062, 2064, 2066, 2068, 2070, 2072, 2074, 2076, 2078, 2080, 2082, 2084, 2086, 2088, 2090, 2092, 2094, 2096, 2098, 2100, 2102, 2104, 2106, 2108, 2110, 2112, 2114, 2116, 2118, 2120, 2122, 2124, 2126, 2128, 2130, 2132, 2134, 2136, 2138, 2140, 2142, 2144, 2146, 2148, 2150, 2152, 2154, 2156, 2158, 2160, 2162, 2164, 2166, 2168, 2170, 2172, 2174, 2176, 2178, 2180, 2182, 2184, 2186, 2188, 2190, 2192, 2194, 2196, 2198, 2200, 2202, 2204, 2206, 2208, 2210, 2212, 2214, 2216, 2218, 2220, 2222, 2224, 2226, 2228, 2230, 2232, 2234, 2236, 2238, 2240, 2242, 2244, 2246, 2248, 2250, 2252, 2254, 2256, 2258, 22

Non-Time Critical Removal Action

OU3 Removal Action

- **Antimony contaminated soil related to painting operations**
- **Risk is non-carcinogenic**
- **Removal Action Objective: Minimize dermal exposure and soil ingestion to reduce Hazard Index to less than one**
- **Excavation of approximately 1,000 cu yd of contaminated soil and disposal in approved off-site landfill**

Removal Action Process

- Intended to “remove risk”
- Removal action can take place at any time during the overall cleanup process, is an *interim action*
- Engineering Evaluation/Cost Analysis (EE/CA)
 - Identifies, analyzes, recommends cleanup alternative
 - OU3 approved Feasibility Study (FS) serves as EE/CA

Removal Action Process

- **Public Participation**
 - **Public Notice – FEB 22, 2007**
 - **Public Availability Session – MAR 5, 2007**
 - **30 Day Public Comment Period - FEB 23-MAR 22 2007**
 - **EE/CA (FS) available at Mead Library, on project web site, CD**
 - **Address public comments**
- **Action Memorandum – formalizes cleanup decision – Spring 2007**
- **Field Work – Fall 2007**

Removal Action Process

- **Removal is not a final action for OU3**
- **Other areas/issues to be addressed in Record of Decision**
 - **Land use controls**
 - **Ordnance and explosives**

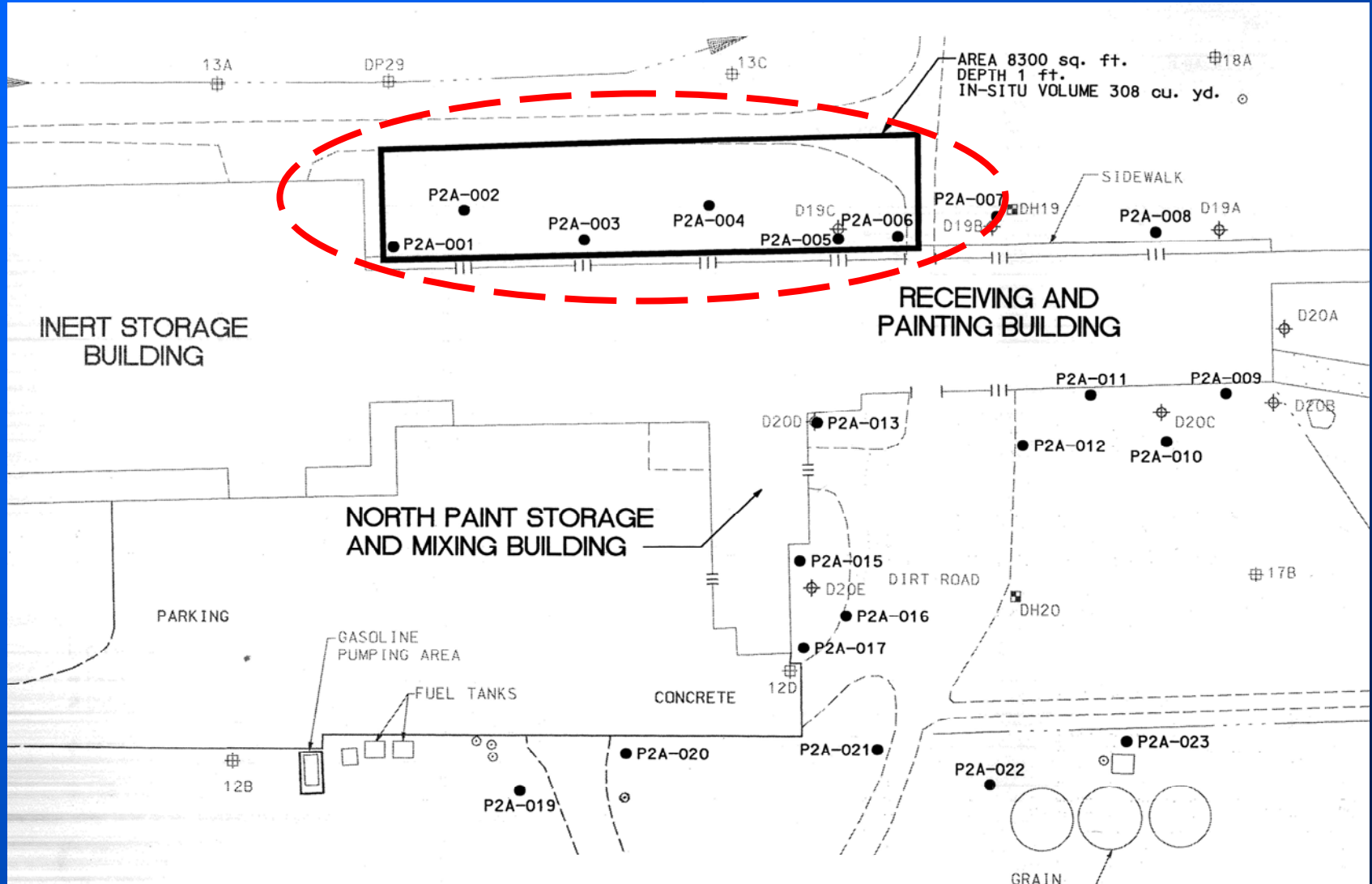
Removal Action Alternatives

- Alternative 1 – No Action
- Alternative 2 – Capping
- Alternative 3 (*RECOMMENDED*)
Excavation and Off-Site Disposal of Antimony
- Alternative 4 –
 - Capping at LLs 2 & 4
 - Excavation & Off-Site Disposal at the Potential Landfill Area

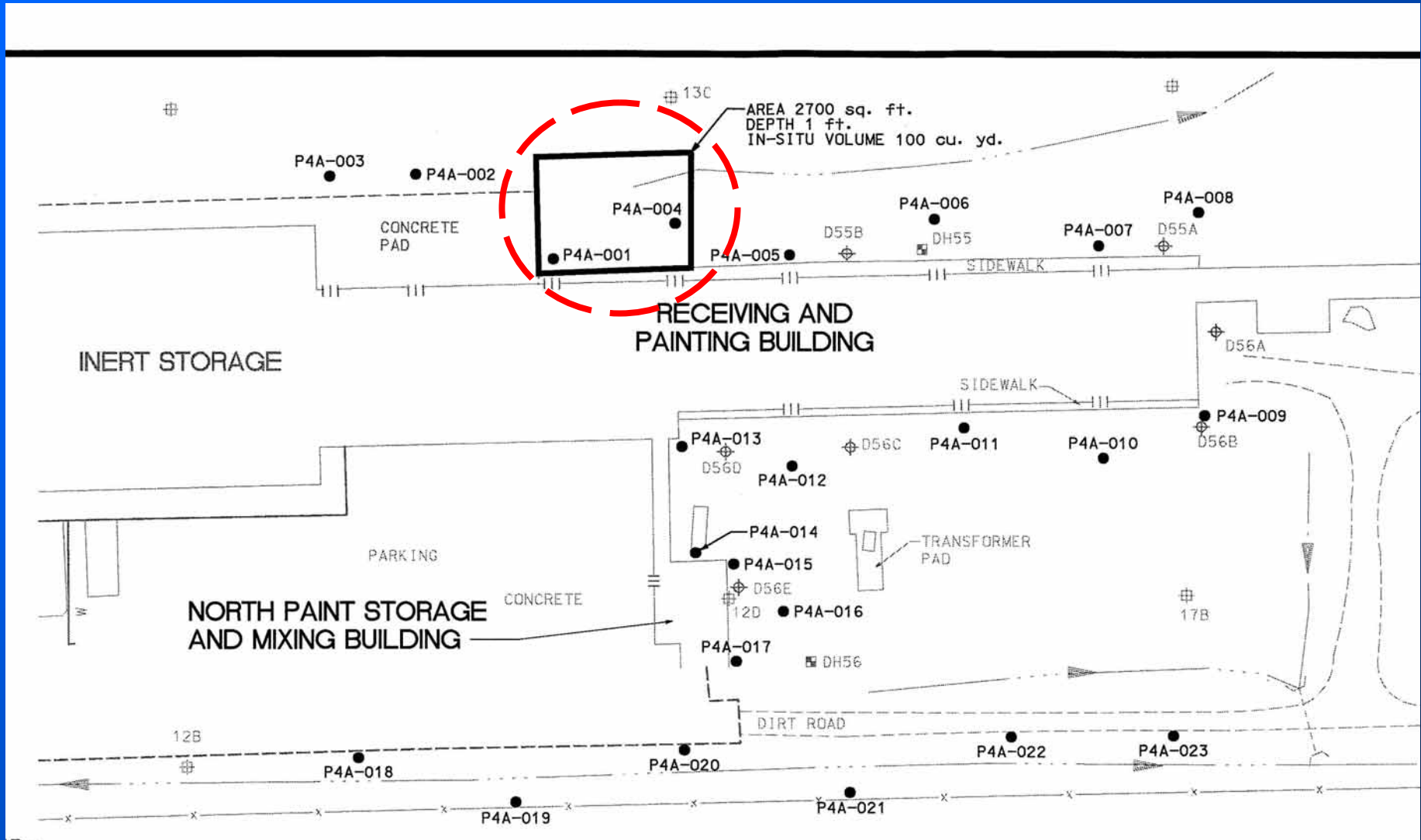
Cleanup Action

- LL 2 Paint Operations Area (300 cu yd)
- LL 4 Paint Operations Area (100 cu yd)
- Potential Landfill (600 cu yd)
- Soil excavation
 - Excavate to 1 foot at LLs and 4 feet at Potential Landfill
 - Reduction in dermal exposure and soil ingestion brings HI to less than one
 - 31 ppm is an accepted remediation goal

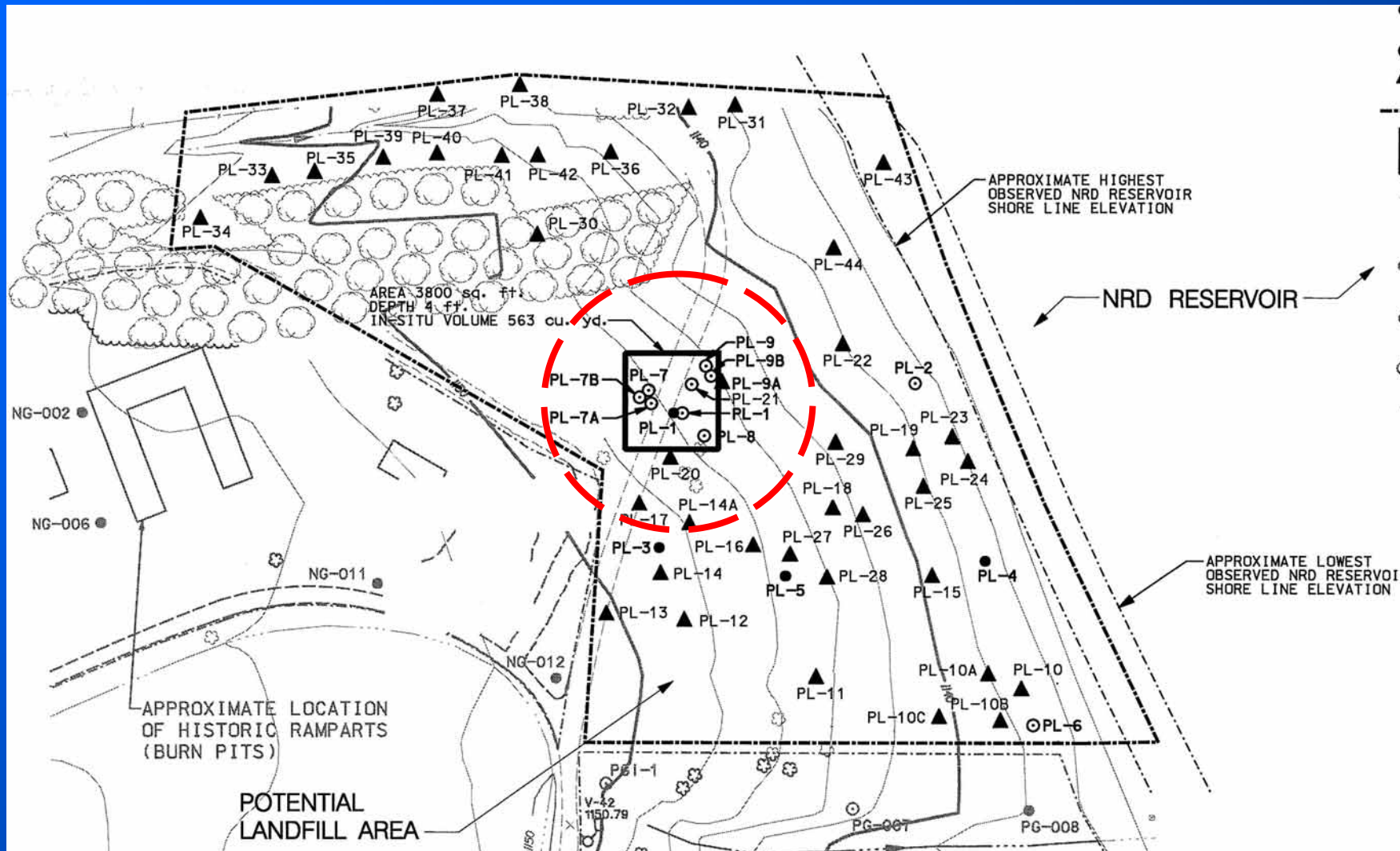
Soil Removal LL2



Soil Removal LL4



Soil Removal Potential Landfill Area



ORDNANCE AND EXPLOSIVES RECURRING REVIEW

OE Recurring Review

- **US Army Corps of Engineers Requirement**
- **Purpose: Determine if OE response actions continue to minimize explosives safety risks and continue to be protective of human health, safety, and the environment**

OE Recurring Review Process

- **Review Historical Documentation**
- **Evaluate current site conditions and any new information since last Recurring Review**
 - **Community Interviews – FEB-MAR 2007**
 - **Public Availability Session – 5 MAR 2007**
 - **Site visit – 5 MAR 2007**
 - **OE Questionnaires – Comment Forms due 22 MAR 2007**
- **Recurring Review Report – Summer 2007**

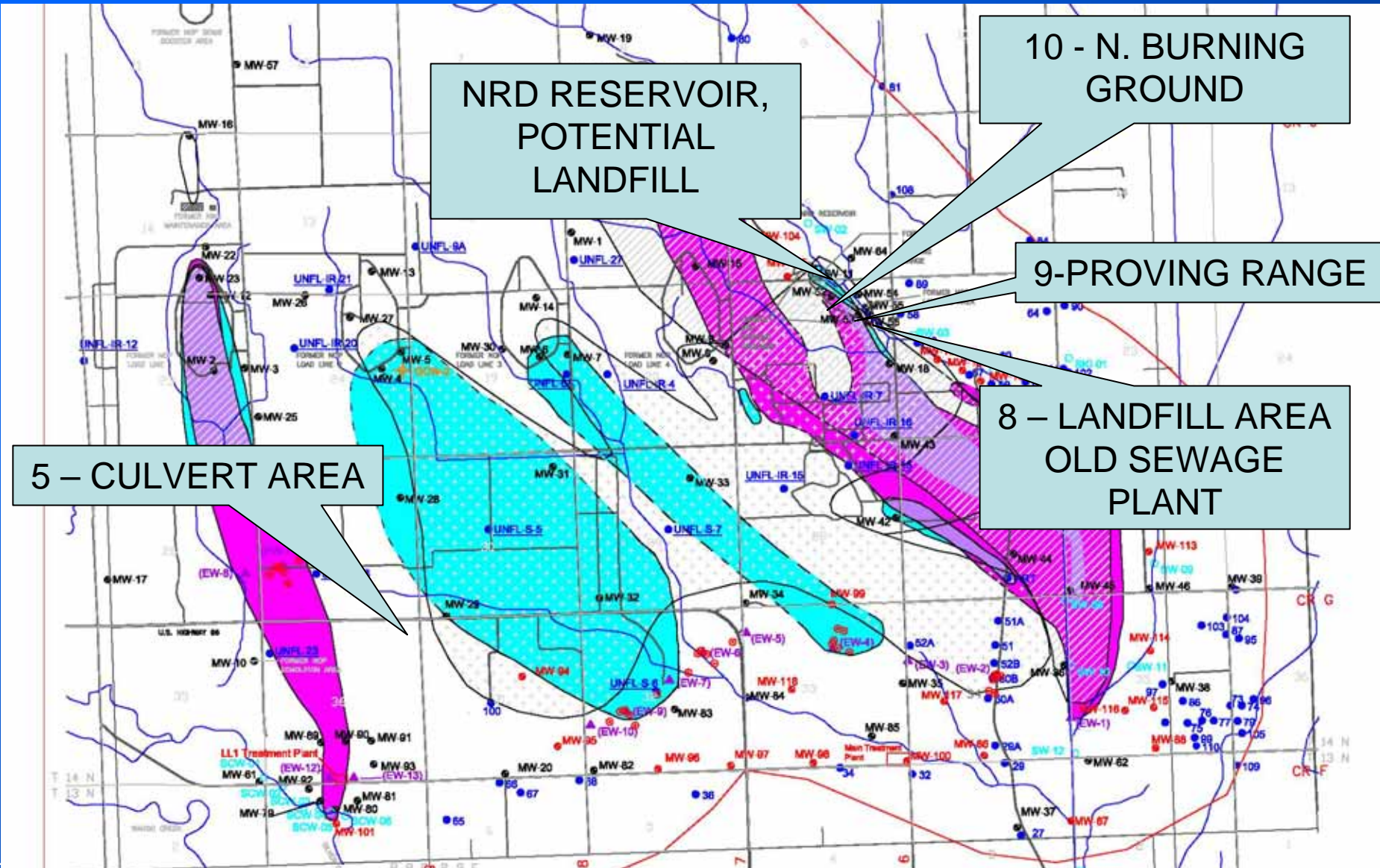
OE Recurring Review Process

- **Three questions**
 - **Is the OE response functioning as intended?**
 - **Are any assumptions used at the time of OE response selection still valid?**
 - **Does new information indicate the OE response no longer minimizes explosives safety risks or is no longer protective?**

OE Areas of Interest

- **Culvert Area (Site 5)**
- **Landfill Area, Former Wastewater Treatment Plant (Site 8)**
- **Proving Range (Site 9)**
- **North Burning Ground (Site 10)**
- **NRD Reservoir and Potential Landfill Area**

OE Areas of Interest



OE History

- **OE Removal Actions**
 - **Action Memorandum & Removal Action at Site 5 (1996-1997)**
 - **Removal Action at NRD Reservoir/Potential Landfill Area (1999)**
- **OE Response Actions**
 - **Groundwater monitoring for CWM at Site 8**
 - **Fencing and/or signage around Site 5, Site 8, NRD Reservoir**



CULVERT AREA – SITE 5



CULVERT AREA – SITE 5



NRD Reservoir/Potential Landfill Area



Landfill Area – Site 8



Former Treatment Plant – Site 8



Signage at NRD Reservoir

Previous OE Recurring Review

- **First OE Recurring Review (2001-2002)**
- **Conclusions**
 - **No land use changes**
 - **No accessibility changes**
 - **No OE incidents**

QUESTIONS?



Please Contact Us:

Garth Anderson, Project Manager

Office: 816-389-3255

E-mail:

H.Garth.Anderson@usace.army.mil